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NW Fisheries Science Center

Overview of Pacific Coast Groundfish Species, Management, and Fleets

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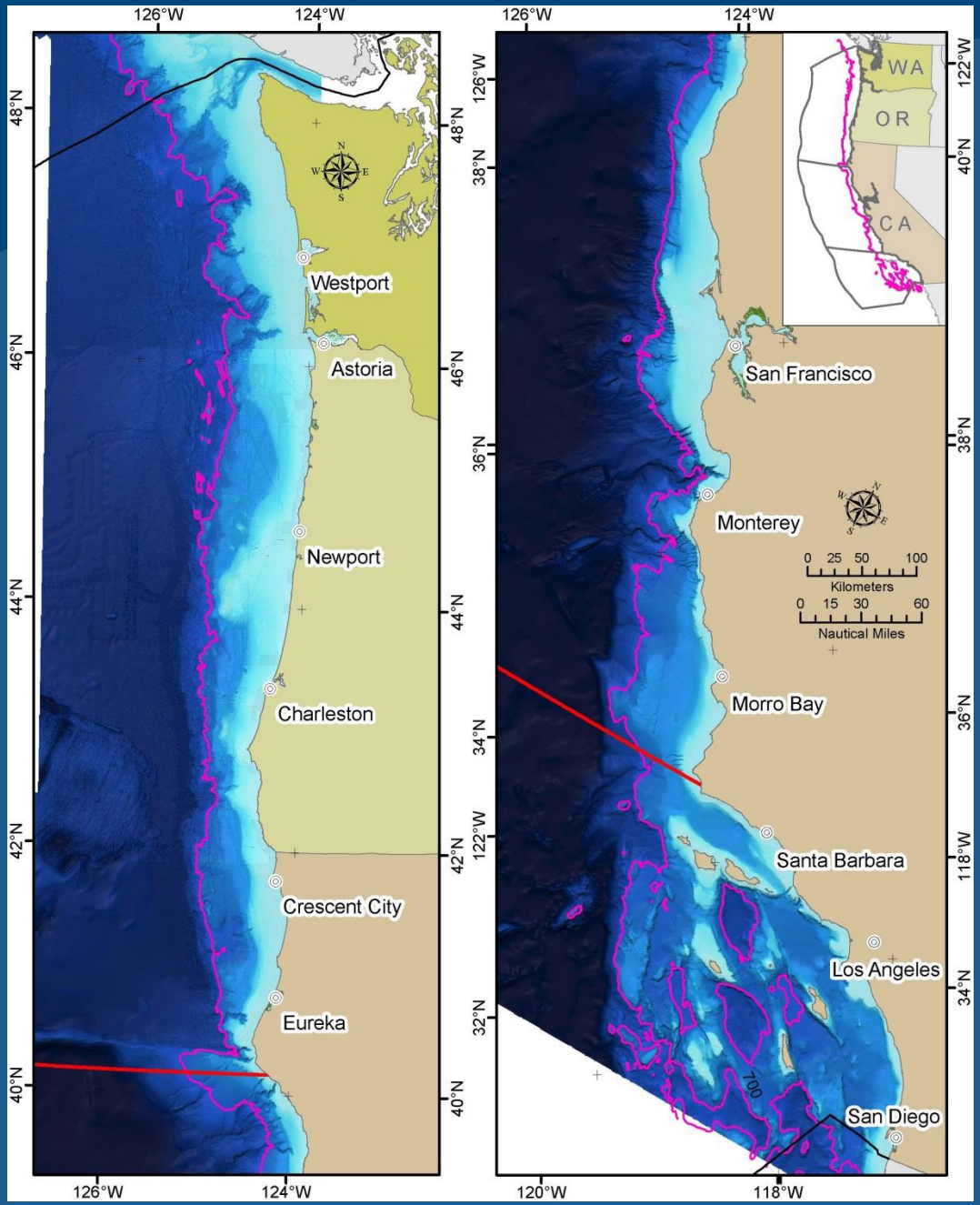
Outline

- Overview
- Species included in the Groundfish FMP
- Fishery components
- Major recent management elements


126°W
124°W
48°N
46°N
44°N
42°N
40°N
Westport
Astoria
Newport
Charleston
Crescent City
Eureka
126°W
124°W
126°W
124°W
122°W
48°N
38°N
36°N
34°N
32°N
40°N
WA
OR
CA
San Francisco
Monterey
0 25 50 100
Kilometers
0 15 30 60
Nautical Miles
Morro Bay
Santa Barbara
Los Angeles
700
San Diego
120°W
118°W
122°W
40°N
38°N
36°N
34°N
118°W

Overview: Foundations

- Fishery Conservation and Management Act of 1976
  - Over-arching Federal marine fisheries law
  - Gave Commerce management authority in **200-mile EEZ**
  - Established **Regional Fishery Management Councils**
  - Specified **National Standards**
    - Prevent overfishing while achieving OY
    - Use of 'best available science'
  - Promoted 'Americanization' of EEZ fisheries
  - Re-authorized and expanded in 1996 and 2006
- Councils provide a forum for broad stakeholder involvement
- Councils recommend actions to NMFS

You Can't Tell the Players Without a Program

Overview: Early Management Highlights

- PFMC's FMP for groundfish includes over 90 species
- Three predominant gear groups
  - Trawl (bottom and mid-water), Hook-and-line, Pot
- Effort constrained through vessel landing limits
  - Cumulative-periodic limits by the mid-1990s
- Groundfish Permit program started in 1994
  - Federal licenses with vessel-length & gear endorsements
  - Some 'Open-Access' targeting of groundfish remains
- First species declared overfished in 1999
  - Total of 10 species: 7 rockfish, 2 roundfish, 1 flatfish
    - 3 have been rebuilt; 3 others close
  - Led to dramatic management changes

More than 90 Groundfish Species

- More than 50 species of **Rockfish**
  - Slow growing; can live well beyond 100 years; live-bearing
  - Occupy diverse habitats: nearshore kelp forests, rocky reefs, canyons, to depths of more than 250 fm; a few are pelagic
- 12 **Flatfish** species (e.g. Dover and petrale soles)
  - Occupy mud/gravel substrate; lifespans of 10-30 years
- 6 **Roundfish** species (e.g.Pacific hake, sablefish, lingcod)
  - Hake are pelagic, migratory, have highly variable recruitment
  - Sablefish can live 85 years, high value to many sectors
- Other species include some sharks, skates, and other fish found from the nearshore to beyond 700 fm

Assorted Rockfish

Dover sole

Lingcod

Sable-fish

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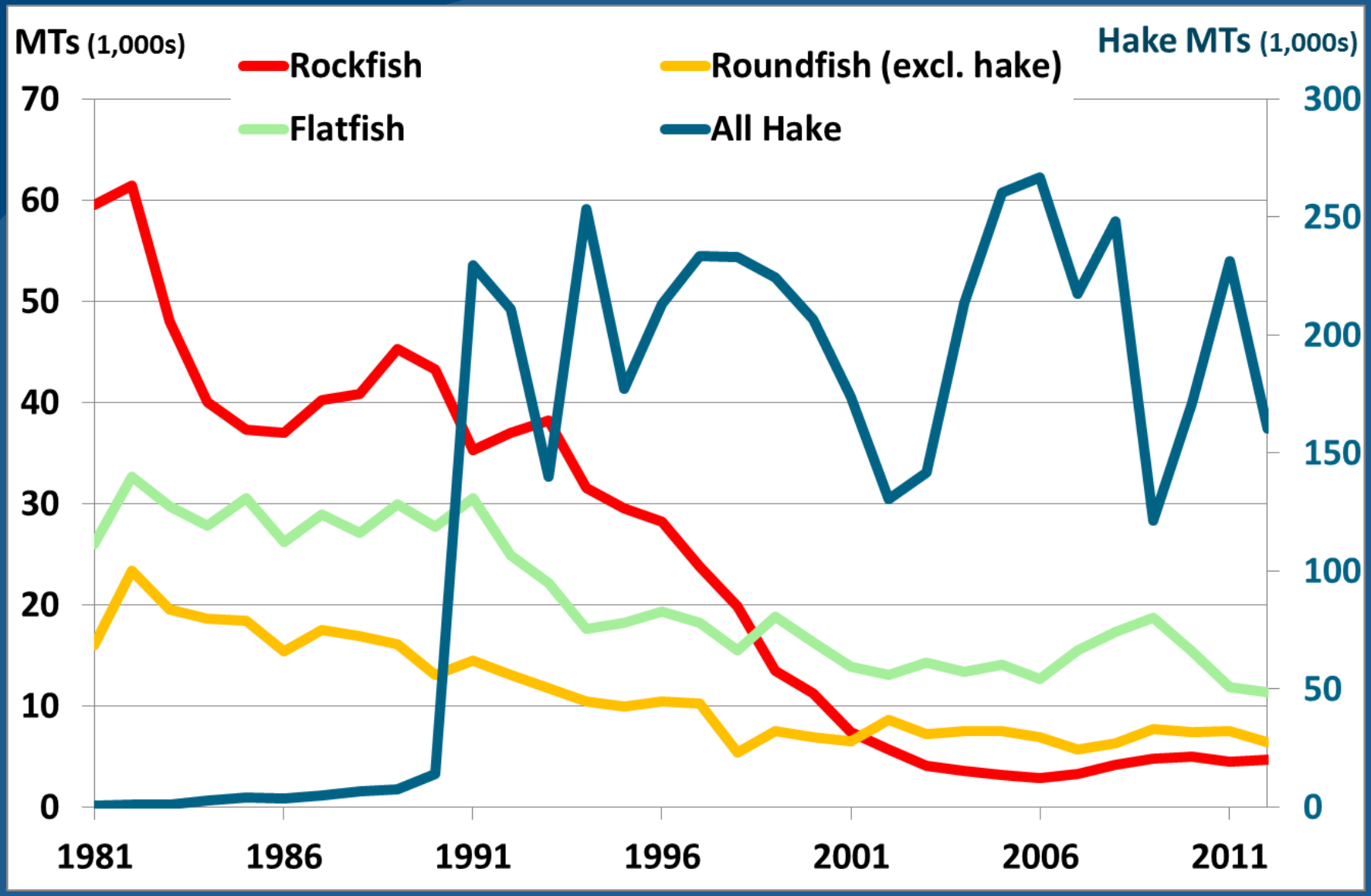
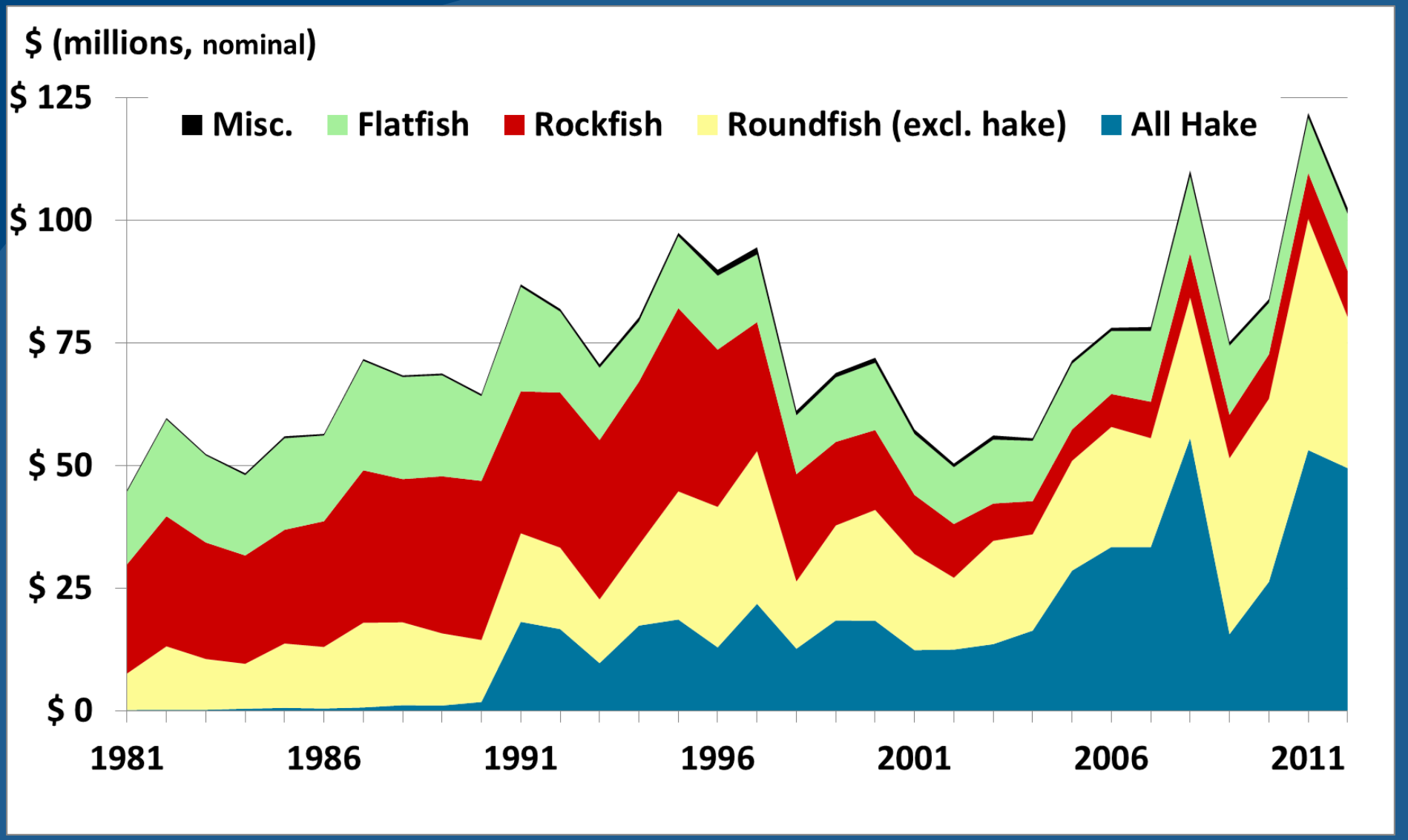
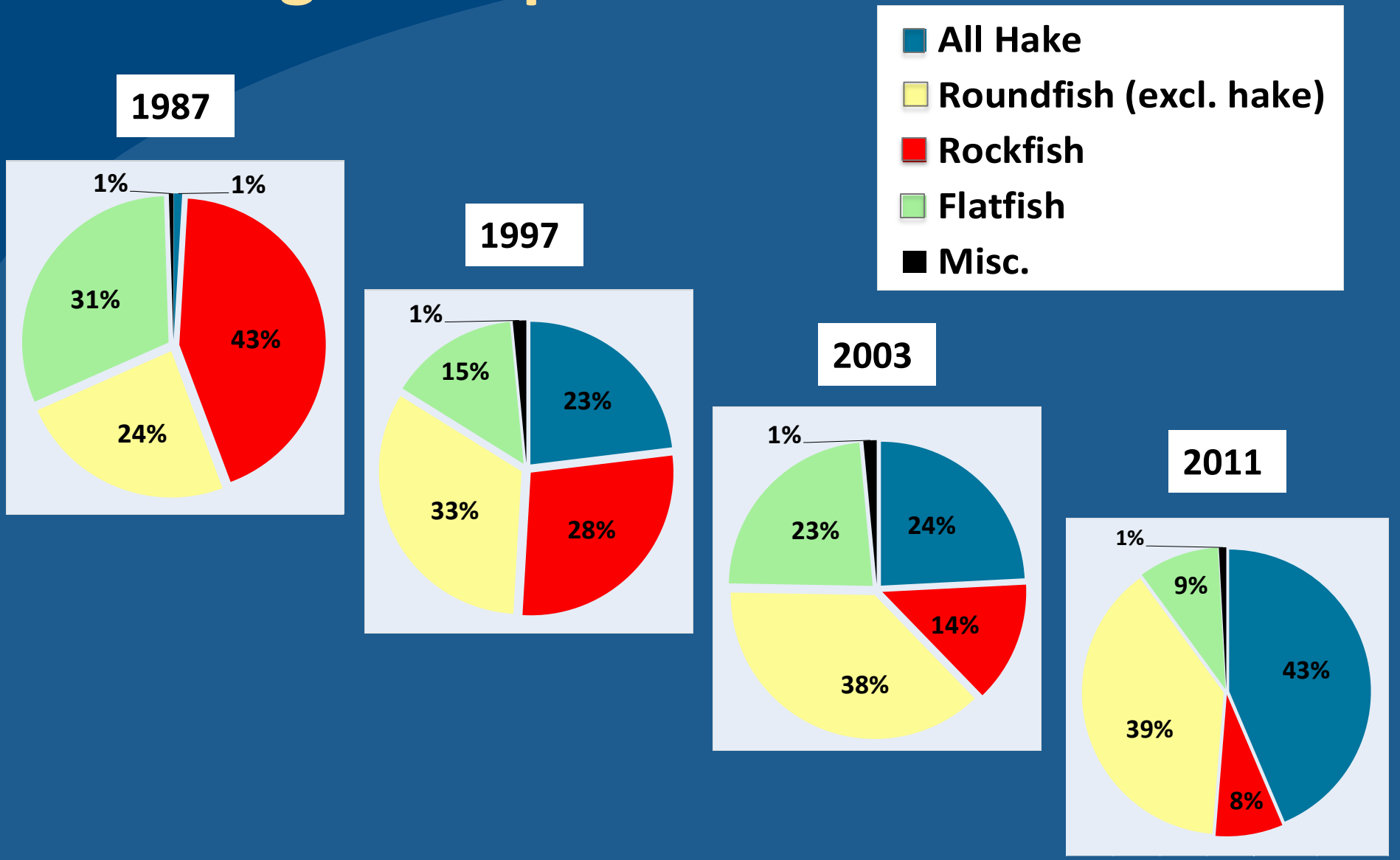
Commercial Landings, by Species Group



Commercial Ex-vessel Revenue, by Species Group



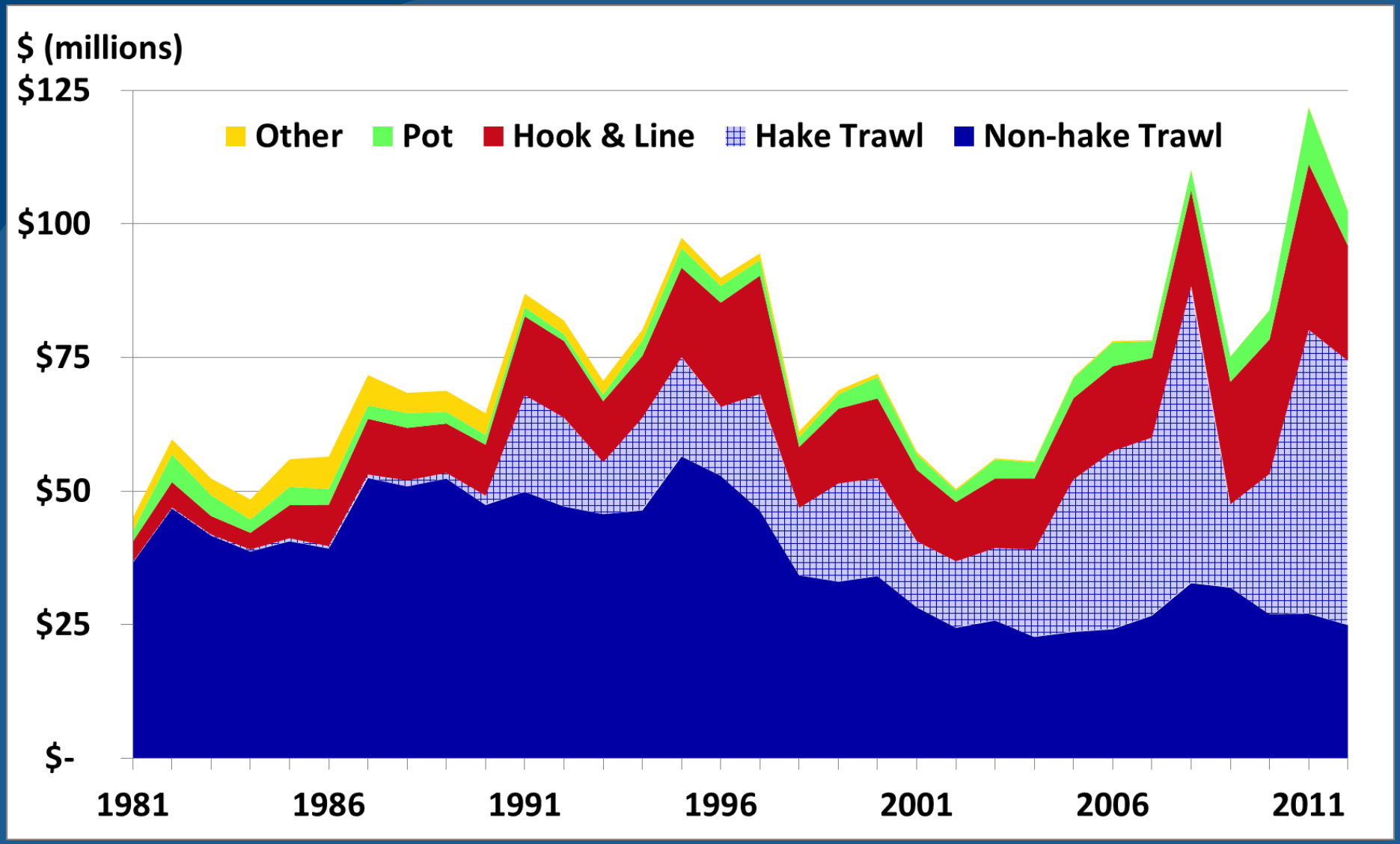
Changes in Species' Revenue Shares



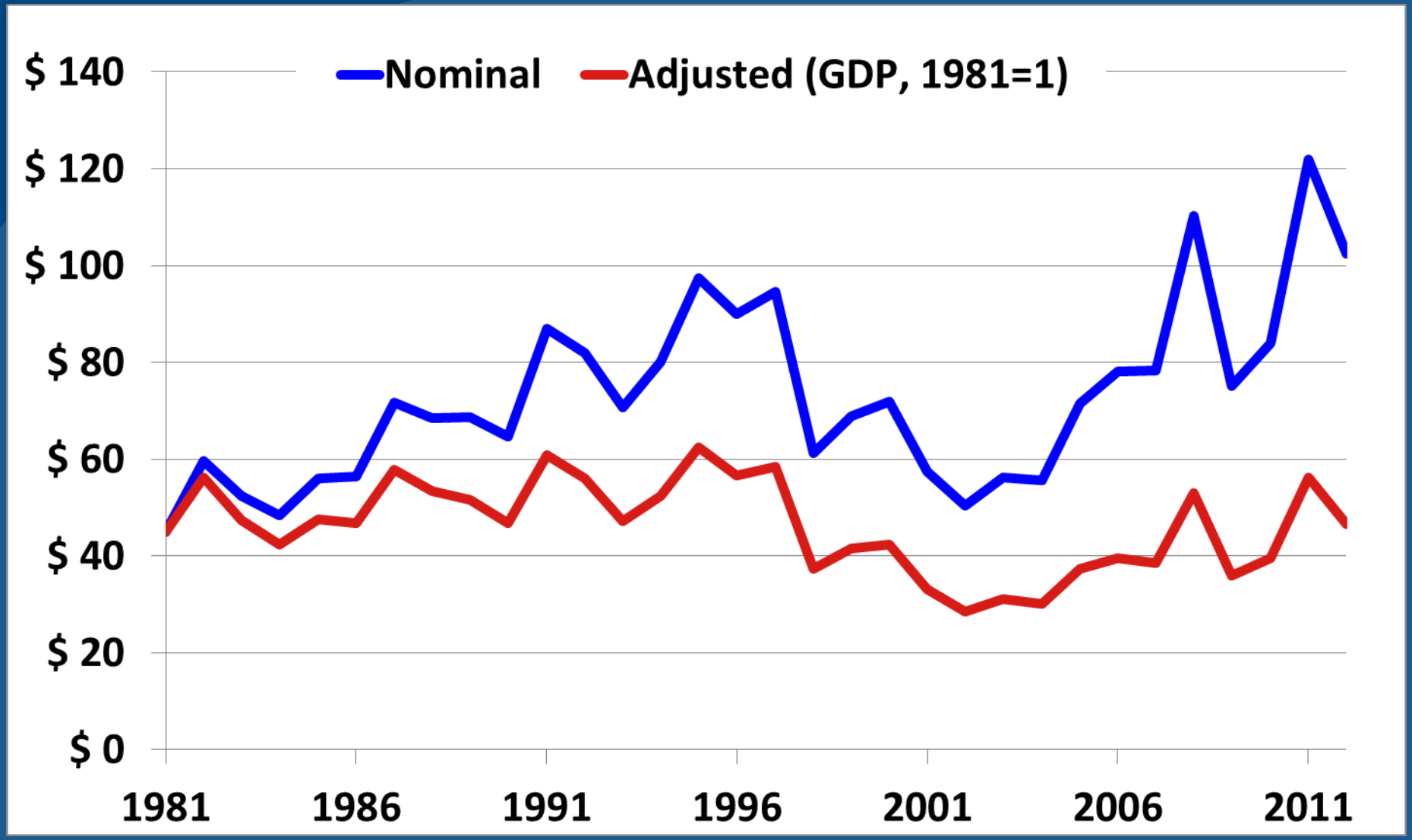
Three Principal Commercial Gear Groups

- **Trawl**
  - Bottom trawls target a wide range of shelf/slope species
  - Mid-water trawls target hake; previously some rockfish
- **Hook & Line**
  - Bottom longline focus is sablefish; some slope rockfish
  - Various line gears used to target nearshore rockfish
- **Pot**
  - Major focus is sablefish; some nearshore
- **Minor gears** (e.g. set nets, shrimp trawls) have lessened in importance under Limited Entry

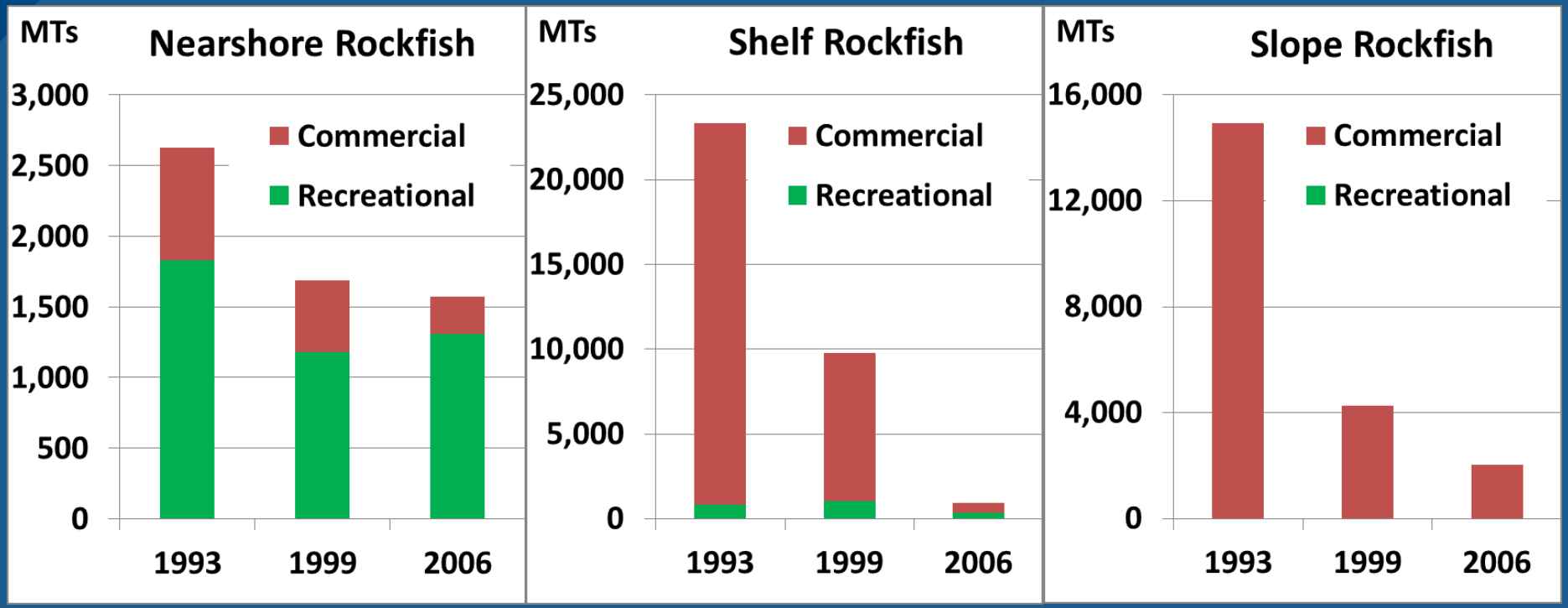
Commercial Ex-vessel Revenue, by Gear Group



Groundfish Ex-vessel Revenue, Nominal/Real



Commercial-Recreational Rockfish Landings



Management Changes Since 2000

- Rockfish Conservation Areas (2002)
- VMS for all Limited-Entry Vessels
- Gear Restrictions
  - development of new, bycatch-reducing gear designs
- Shifting effort away from areas of higher bycatch
- Trawl Permit Buyback (2004)
- Trawl Catch Share Program (2011)

Fishery CPUE is commonly used as an indicator of population abundance elsewhere, however, the cumulative stream of changes in management restrictions and the fishery makes their use very challenging here

Biennial Management-Assessment Schedule (since 2005)

Assessment	Work on Assessments	Assessments finsished and STAR reviews	Mgmt support, research, planning
Management	Implement 2013-14 Regs	SSC reviews and Council adopts assessments	Begin planning mgmt for 2015-16
2013	**Jan**	**April - Sept**	**Sept - Dec**

Assessment	Suggest 2015 assessments	Continue "off"-year research and preparation for 2015, including identifying ageing priorities and holding any workshops		
Management	Continue work on 2015-16 mgmt; Discuss 2015 assessment options		Finalize 2015 assessment list & 2015-16 mgmt	Notice & comment on proposed 2015-16 mgmt
2014	**March**	**April**	**June**	**July - Dec**

Management Changes Since 2000

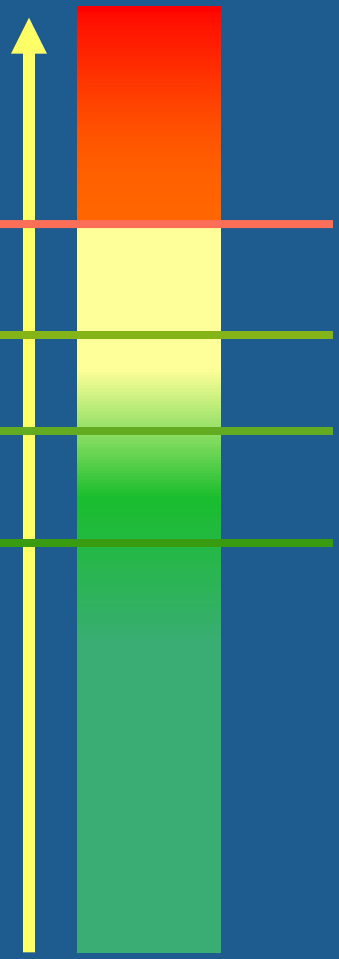
New Harvest Framework

OFL = Overfishing Level

ABC = Allowable Biological Catch

ACL = Annual catch limit

ACT = Annual catch target



Scientific uncertainty

Mgmt. uncertainty

$OFL \geq ABC \geq ACL \geq ACT$

$OFL = F_{MSY} * B_{EXploitable}$

$ABC = F_{MSY} * B_{EX} *$ Buffer (size of default buffer is based on assessment category)

Impacts of uncertainty

- Allowable harvest is reduced, based Category level
- Category assignments based on uncertainty
- Uncertainty is a function of the ability of the data to paint a coherent picture of status, trends, and productivity
- Factors that reduce the accuracy or increase the bias of data or gaps in needed data, will tend to:
  - Reduce the amount of catch/revenue available to the fishing industry (& benefits to the nation)
  - Increase the risks that management will not be adequately conservative